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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,224	12/31/2003	Alan M. Myers	884.855US1	6642
7590	07/27/2005		EXAMINER	
Schwegman, Lundberg, Woessner & Kluth, P.A. P.O. Box 2938 Minneapolis, MN 55402			QUACH, TUAN N	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

8A

Office Action Summary	Application No. 10/750,224	Applicant(s) MYERS ET AL.	
	Examiner Tuan Quach	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 26-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5-12, 14, 15, 26-29 is/are rejected.
- 7) ☐ Claim(s) 2-4 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-15 and 26-29 have been elected without traverse in the reply filed May 16, 2005. Non-elected claims 16-25 have been cancelled.

Claims 9 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 9, "the cooling channels and "the capillary pump channels" lack antecedent basis.

Claim 28 is contradictory to claim 27 as the same layer being claimed contradicts the separate layers in claim 27.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 5-8, 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. 2005/0062150 A1.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

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the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Re claims 1 and 26, Kim et al. teach apparatus comprising electronics flip chip 114/124 having circuitry 124 on first face and second opposite face and electroosmotic pumps 28. in layer 116 over the second, opposite face; cooling channels adjacent a face of the chip is shown, 116, 68a/68b, [0042]. See Fig. 19, [0044]-[0049].

Re claims 5 and 8, electrical power by electrical conductors 36 through the chip, e.g., substrate 10, is shown in Fig. 8, [0039]. Re claim 6, cooling channels in further layer is shown, [0042], 68a/68b, [0049], 0050], channels 116. Re claims 7 and 8, fluid connections at lateral edges of the apparatus are shown in Fig. 12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 10-12 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. supra.

Regarding the chip being silicon, the cooling channels and pumps being further layers in claims 10-12, separate layers of material or same material in claims 27-29, , in addition to the teachings above, the use of same layer of material for the pump and cooling channels would have been further obvious in view of Kim et al., [0057] wherein channels may be formed in the same structure or may be in separate structures as to the dice 112, 114, 140, and wherein silicon being presumably the die material or otherwise such would have conventional and obvious. The same plane would have been obvious as shown in Fig. 19. Regarding claims 11-12, such corresponds to limitations in claims 7 and 8 discussed above.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. as applied to base claim 1 above, and further in view of Murata et al.

Although Kim et al. above do not recite the detailed application regarding the processor, memory, input/output, power supply, such application is conventional as evidenced by Murata et al., 5,875,037, column 5 line 64 to column 8 line 41 and as such would have been obvious.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. as applied to base claim 1 above, and further in view of Graczyk et al.

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Although Kim et al. above do not recite the detailed application regarding the telecommunications circuit, and corresponding elements thereto, e.g., antenna, input/output system, power supply, such application processor, memory, input/output, power supply, such application is conventional and obvious as evidenced by Graczyk et al., 6,628,340 B1, column 4 line 10 to column 10.

Claims 2-4, 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 9 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The prior art does not recite the limitations in claims 2, 9 and 13 regarding the cooling channels and the capillary pump channels in different or same layers in the context of base claim 1, or the limitations as in claim 10 regarding the differing silicon layers for the cooling channels and pumps.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schueller et al. 6,719,868 is made of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Tuan Quach whose telephone number is 571-272-1717. The examiner can normally be reached on M-F from 8:30 AM to 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Nathan Flynn, can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tuan Quach
Primary Examiner